Examiner-Initiated Interview Summary	Application No.	Applicant(s)
	09/683,369	TU ET AL.
	Examiner	Art Unit
	Sath V. Perungavoor	2624

All Participants:

(1) Sath V. Perungavoor.

(2) Patrick S. Yoder (Reg. No. 37,479).

Status of Application: _____

(3) _____.

(4) _____.

Date of Interview: 5 July 2006

Time: _____

Type of Interview:

☒ Telephonic
☐ Video Conference
☐ Personal (Copy given to: ☐ Applicant ☐ Applicant's representative)

Exhibit Shown or Demonstrated: ☐ Yes ☒ No

If Yes, provide a brief description: .

Part I.

Rejection(s) discussed:

Claims discussed:

1, 12 and 17

Prior art documents discussed:

Part II.

SUBSTANCE OF INTERVIEW DESCRIBING THE GENERAL NATURE OF WHAT WAS DISCUSSED:

See Continuation Sheet

Part III.

☒ It is not necessary for applicant to provide a separate record of the substance of the interview, since the interview directly resulted in the allowance of the application. The examiner will provide a written summary of the substance of the interview in the Notice of Allowability.

☐ It is not necessary for applicant to provide a separate record of the substance of the interview, since the interview did not result in resolution of all issues. A brief summary by the examiner appears in Part II above.

_______________ (Examiner/SPE Signature)

_______________ (Applicant/Applicant's Representative Signature – if appropriate)

Continuation of Substance of Interview including description of the general nature of what was discussed: Examiner suggested amendments to the independent claims that would place the application in condition allowance. Applicants' reprensentative agreed and further made minor amendments to the examiner's proposal in order to correct formal matters. Applicants' representative further authorized an examiner's amendment.

EXAMINER'S AMENDMENT PROPOSAL

PROPOSED ON July 3, 2006

Amended on July 6, 2006

IN THE CLAIMS

The following listing of the claims is provided in accordance with 37 C.F.R. §1.121:

1. (currently amended) A method for identifying images of laser stripes projected onto the surface of an object in a non-contact gauge measurement system, comprising:

identifying ~~the~~ a type of object to be imaged and based on ~~said~~ the object type generating a template, the~~said~~ template representing~~being~~ an expected laser striping pattern and a local orientation or flow field at each point in ~~each~~ images for each of a plurality of cameras, the~~said~~ template being ~~predetermined or known~~ based on prior knowledge of the surface of the~~said~~ object;

projecting one or more laser stripes onto a surface of the object;

obtaining an image of said projected laser stripes;

generating a matched filter for each pixel in said image from the~~said~~ template;

filtering said image with said generated matched filter along curves, wherein the curves are either parallel or perpendicular to the orientation of respective flow fields, such that the~~said~~ filter correlates the~~said~~ laser stripes to an expected laser striping pattern and orients filtering according to an expected local orientation or flow field; and

identifying the center of said projected laser stripes in said filtered image.

2. (previously presented) The method of Claim 1 for identifying images of laser stripes wherein the step of generating a matched filter for each pixel in said image includes the step of calculating:

$$v(i,j) = \sum_{R} \left(image(r) \times gaussian(r) \right)$$

for each pixel (i,j) in said image, wherein image(r) is the image intensity value for a point on a curve R that emanates from pixel (i,j), and is always tangential to a flow field.

3. (original) The method of Claim 2 for identifying images of laser stripes wherein the step of generating a matched filter for each pixel in said image includes the step of calculating:

$$t(i, j) = \sum_{P} \left(v(p) \times gaussian(p) \right)$$

for each pixel (i,j) in said image, wherein P is a curve that emanates from pixel (i,j), and is always perpendicular to the flow field.

4. (original) The method of Claim 3 for identifying images of laser stripes wherein the step of identifying the center of said projected laser stripes in said filtered image includes, for each raster line in said image, identifying pixels where t(i,j) is a local maximum with respect to said raster line.

5. (original) The method of Claim 1 for identifying images of laser stripes wherein the step of generating a matched filter for each pixel in said image calculates a two-dimensional matched filter for each pixel in said image.

6. (original) The method of Claim 1 for identifying images of laser stripes wherein the step of generating a matched filter for each pixel in said image includes calculating a first one-dimensional filter for each pixel and calculating a second one-dimensional filter for each pixel.

7. (original) The method of Claim 6 for identifying images of laser stripes wherein said first and second one-dimensional filters are each separable gaussian filters.

8. (original) The method of Claim 6 for identifying images of laser stripes wherein said first and second one-dimensional filters are each separable non-gaussian filters.

9. (previously presented) The method of claim 1, further comprising determining one or more corrupted laser stripes in said filtered image.

10. (previously presented) The method of claim 9, wherein the step of determining said corrupted laser stripes include identifying incoherent pixels or no pixels in said projected laser stripes.

11. (previously presented) The method of claim 9, further comprising synthesizing said corrupted laser stripes based on corresponding uncorrupted laser stripes in other images.

12. (previously presented) A method for identifying images of laser stripes projected onto the surface of an object in a non-contact gauge measurement system, comprising:

identifying a~~the~~ type of object to be imaged and based on the~~said~~ object type generating a template, the~~said~~ template representing~~being~~ an expected laser striping pattern and a local orientation or flow field at each point in ~~each~~ images for each of a plurality of cameras, the~~said~~ template being ~~predetermined or known~~ based on prior knowledge of the surface of the~~said~~ object;

projecting one or more laser stripes onto a surface of the object;

obtaining an image of said projected laser stripes;

generating a matched filter for each pixel in said image from said template by calculating:

(a) $v(i,j) = \sum_{R} \left(image(r) \times gaussian(r) \right)$ and

(b) $$t(i,j) = \sum_{P} \left(v(p) \times gaussian(p) \right)$$

for each pixel (i,j) in said image, wherein image(r) is the image intensity value for a point on a curve R that emanates from pixel (i,j) and is always tangential to a flow field, and P is a curve that emanates from pixel (i,j) and is always perpendicular to the flow field;

filtering said image with said generated matched filter along curves, wherein the curves are either parallel ~~or~~ and perpendicular to the orientation of respective flow fields, such that the~~said~~ filter correlates the~~said~~ laser stripes to an expected laser striping pattern and orients filtering according to expected local orientation or flow field; and

identifying the center of said projected laser stripes in said filtered image.

13. (previously presented) The method of Claim 12, wherein the step of identifying the center of said projected laser stripes in said filtered image includes, for each raster line in said image, identifying pixels where t(i,j) is a local maximum with respect to said raster line.

14. (previously presented) The method of Claim 12, wherein the step of generating a matched filter for each pixel in said image includes calculating a two-dimensional matched filter for each pixel in said image.

15. (previously presented) The method of Claim 12, wherein the step of generating a matched filter for each pixel in said image includes calculating a first one-dimensional filter and a second one-dimensional filter for each pixel in said image.

16. (previously presented) The method of Claim 15, wherein said first and said second one-dimensional filters are each separable gaussian or non-gaussian filters.

17. (currently amended) A method for identifying images of laser stripes projected onto the surface of an object in a non-contact gauge measurement system, comprising:

identifying a~~the~~ type of object to be imaged and based on the~~said~~ object type generating a template, the~~said~~ template representing~~being~~ an expected laser striping pattern and a local orientation or flow field at each point in ~~each~~ images for each of a plurality of cameras, the~~said~~ template being ~~predetermined or known~~ based on prior knowledge of the surface of the~~said~~ object;

projecting one or more laser stripes onto a surface of the object;

obtaining a two-dimensional image of said projected laser stripes;

generating a matched filter for each pixel in the~~said~~ image from the~~said~~ template;

filtering the~~said~~ image with the~~said~~ generated matched filter along curves, wherein the curves are either parallel or perpendicular to the orientation of respective flow fields, such that the~~said~~ filter correlates the~~said~~ laser stripes to an expected laser striping pattern and orients filtering according to expected local orientation or flow field;~~-~~ ~~and~~

identifying incoherent pixels or no pixels in said projected laser stripes; and

determining one or more corrupted laser stripes in said image based on the identification.

18. (previously presented) The method of claim 17, further comprising synthesizing said corrupted laser stripes based on corresponding uncorrupted laser stripes in other images.

19. (previously presented) The method of claim 18, further comprising identifying said corresponding uncorrupted laser stripes in other images based on a epi-polar geometry and a template structure.

20. ~~(previously presented) The method of claim 19, wherein the template structure represents prior knowledge of the surface of the object.~~ Cancelled